Alexa Turkovich

Period, 7

January, 1, 2011

Barbie Bungee

Normally dropping a Barbie doll in the middle of the stairwell, in seventh period math, is not a typical day, but memorable. This experiment that we conducted helped us comprehend what real mathematicians do for a living, by putting it in a real life situation. Reaching the day that Barbie plunged, took lots of thought, and consumed plenty of time. But, the outcome of the plunge was worth it all. This activity was a relaxing way to make a closure to our math unit.

First my group had to supply a Barbie doll. Without this step, we would not have an experiment to perform in class. Next, we did a mini experiment using only one through six rubber bands attached to our doll and watched her plunge. We collected how many inches she went down per rubber band, which gave us a mean for the data.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| # of rubber bands | 1 | 2 | 3 | 4 | 5 | 6 |
| Trials | 16, 17, 16 | 26, 28, 27 | 38, 40, 45 | 53, 54, 54 | 61, 64, 65 | 69, 69, 72 |
| Mean | 16.3 | 27 | 39.9 | 53.6 | 63.3 | 70 |

*In the table above, it shows the data from the test trail we ran in class.*

After conducting the experiment, we made a graph of the mean. And we decided that the number of rubber band on the *x* axis, and the mean would be on the *y* axis.

Number of rubber bands

Mean

The chart (above) shows the amount of rubber bands per centimeter. The points are almost perfectly spread apart, but they are not perfectly even, because humans could vary the data. The slope of the line 10.7, that means that there were about 10.7 inches added for each rubber band used. After finding out the slope, we could make our equation. Our equation was y= 16.3+10.7(x-1). We choose to use point slope form, because we thought that it was the simplest way to put our data into an equation.

After figuring out our equation, we had to somehow convert 4.82 meters into inches to allow it to fit into our equation. This was not an easy task, because we had to change the meters into centimeters before we could convert the meters into inches. Since there we 100 centimeters per each meter, there were 482 meters. Next, we had to convert the 482 centimeters into inches. The answer that we got was 189.76 inches. Now, we can estimate how many rubber bands it take to have Barbie get as close to the ground as possible, without crashing.

To find out how many rubber bands we needed what we did was but 189.76 in for y and kept the same point slope equation that we used earlier. So it looked like this: 189.76= 16.3+10.7 (x-1). The answer we found was about 17 (it is ABOUT because you cannot have .2 of a rubber band) rubber bands.

Now that we have an answer, we could have our Barbie jump. Our group was second, and the group before ours Barbie jump was successful. Unfortunately, are Barbie’s head was slammed against the ground as it landed, making us unsuccessful. Maybe our trials were not perfect because they were conducted by humans, and humans are not perfect. Our group worked well together as a team, and the work was split up pretty evenly. If I could do this experiment over again, I would have probably done the test trails again, slowly, and have accurate data. All in all, this experiment changed the view of mathematics for me, and took 8th grade math to a whole new level.